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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,891	03/08/2001	Kentaro Nakamura	826.1695/JDH	6819

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EXAMINER

SEDIGHIAN, REZA

ART UNIT PAPER NUMBER

2633

DATE MAILED: 12/18/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,891

Applicant(s)

NAKAMURA ET AL.

Examiner

M. R. Sedighian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 1, it is not clear what is meant by “ ... a transmitting unit setting the upstream optical signal to a first band and ..., setting the downstream optical signal to a second band ...”. Figure 5 shows a transmitting unit at one end for transmitting the upstream optical signals, and another transmission unit at the other end for transmitting the downstream optical signals. There are two transmission units, one at each end. It is not clear how a transmitting unit sets both upstream and downstream optical signals??

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Yang (US Patent No: 6,130,775).

Regarding claim 1, as it is understood in view of above 112 problem, Yang teaches an optical WDM transmission system (200, fig. 2) in a bi-directional optical WDM transmission system (col. 2, lines 23-24) for transmitting an upstream (col. 2, lines 44-48) and downstream (col. 3, lines 17-20) optical signal along a single line (the optical fiber that connects the

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transmitter to receiver), comprising: transmitting units setting the upstream (210, fig. 2) optical signals to a first band (col. 2, lines 45-46, 65-66) and setting the downstream (260, fig. 2) optical signals to a second band (col. 3, lines 17-20); and a distributed amplifier unit (270, 250, 272, fig. 2) having a first pumping light source (270, fig. 2) for pumping only the upstream optical signal (col. 2, lines 38-43, 59-67) and a second pumping light source (272, fig. 2) for pumping only the downstream optical signal (col. 3, lines 1-11, 31-37).

Regarding claim 3, Yang teaches the first pump (270, fig. 2) amplifies the upstream optical signal through backward pumping (col. 3, lines 40-45) and the second pump (272, fig. 2) amplifies the downstream optical signals through backward pumping (col. 3, lines 31-37).

Regarding claim 5, Yang teaches multiplexing/demultiplexing units (230, 232, fig. 2) located at one or both ends (col. 2, lines 51-56, col. 3, lines 25-30).

Regarding claim 7, Yang teaches a circulator unit (220, 225, fig. 2) located at one or both ends of the amplifier unit (col. 2, lines 50-56, col. 3, lines 25-30).

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US Patent No: 6,130,775) in view of Mollenauer et al. (US Patent No: 4,699,452).

Regarding claim 2, Yang differs from the claimed invention in that Yang does not specifically disclose the amplifier unit performs Raman amplification. Mollenauer teaches a

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method of optical amplification such as the one of Yang (col. 5, lines 45-60 and fig. 6) with Raman amplification effects (col. 2, lines 65-68, col. 3, lines 1-5, 12-13, col. 7, lines 5-25). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention that the optical amplification system of Yang incorporates Raman effects to avoid the introduction of significant amounts of SBS-caused pump noise.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US Patent No: 6,130,775) in view of Kinoshita (US Patent No: 6,342,965).

Regarding claim 4, Yang differs from the claimed invention in that Yang does not disclose the first and second pumping light includes a plurality of light sources of different wavelengths. Kinoshita teaches first (123-1', fig. 49) and second pump lights (123-3', fig. 49) that includes a plurality of light sources of different wavelengths (123-1A', 123-1B', 123-3A', 123-3B', fig. 49). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of invention to incorporate first and second pump lights with light sources of different wavelengths such as the one of Kinoshita for the pump lights in the optical amplification system of Yang in order to provide a wide band amplification system.

8. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang (US Patent No: 6,130,775) in view of Thelen (US patent No: 4,373,782).

Regarding claim 6, Yang differs from the claimed invention in that Yang does not disclose a multilayer thin film filter unit for separating the upstream and downstream optical signals from each other. Thelen teaches a multilayer thin film filter unit for separating or

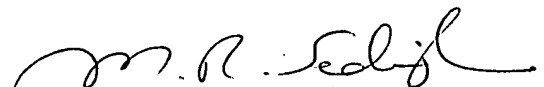
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demultiplexing optical signals (col. 1, lines 31-41). Therefore, it would have been obvious to an artisan at the time of invention to incorporate multilayer thin film filters such as the ones of Thelen for the demultiplexers in the optical transmission and amplification system of Yang in order to provide a filter that is highly transmissive or highly reflective in a specified wavelength band.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. R. Sedighian whose telephone number is (703) 308-9063. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.


M.R. SEDIGHIAN
Patent Examiner
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